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Patent
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APPLICATION NO.: 10/725,767
03SKY0028
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AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the above-referenced application:

1 1. (Currently amended) A method for filtering a received signal in a
2 wireless receiver, comprising:

3 providing a received signal to a filter chain located between a downconverter
4 and a demodulator, the filter chain comprising an input, a variable gain amplifier and an
5 output; and

6 inverting the impedance of the received signal in the filter chain using an
7 inductance applied at the output of the amplifier, ~~without interfering with the function of~~
8 ~~the amplifier~~ the filter chain arranged such that a feedback loop is located between an
9 output of the variable gain amplifier and the output of the filter chain.

1 2. (Currently amended) The method of claim 1, ~~further comprising~~
2 wherein inverting the impedance of the received signal at the output of the amplifier
3 comprises using a voltage controlled current source to transform the inductance applied
4 to the received signal to a capacitance.

1 3. (Original) The method of claim 2, further comprising implementing
2 the voltage controlled current source as a pair of transconductance amplifiers.

1 4. (Currently amended) The method of claim 3, further comprising
2 ~~implementing the inductance at the output of the amplifier using a pair of voltage~~
3 ~~controlled current sources and~~ inserting a capacitance at the output of the filter chain.

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1 5. (Currently amended) A low-noise filter for a wireless receiver,
2 comprising:

3 an amplifier; and

4 an impedance inverter applied at the output of the amplifier and configured to
5 transform inductance applied to a received signal to a capacitance, ~~without interfering~~
6 ~~with the function of the amplifier~~ the impedance inverter having a feedback loop located
7 between an output of the amplifier and an output of the low-noise filter.

1 6. (Canceled)

1 7. (Currently amended) The low-noise filter of claim 6 5, wherein the
2 impedance inverter further comprises:

3 a pair of transconductance amplifiers; and

4 at least one capacitance coupled to the output of one of the transconductance
5 amplifiers.

1 8. (Original) The low-noise filter of claim 7, wherein the impedance
2 inverter removes direct current (DC) offset present at the input of the amplifier.

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1 9. (Currently amended) A portable transceiver, comprising:
2 a modulator configured to receive and modulate a data signal;
3 an upconverter configured to receive the modulated data signal and provide a
4 radio frequency (RF) signal;
5 a transmitter configured to transmit the RF signal; and
6 a direct conversion receiver having a filter chain including an amplifier, a filter
7 and an impedance inverter configured to transform inductance applied to a received
8 signal to a capacitance, ~~wherein the impedance inverter is applied at an output of the~~
9 ~~amplifier such that an open circuit exists between the impedance inverter and an input~~
10 ~~of the amplifier~~ the impedance inverter having a feedback loop located between an
11 output of the amplifier and an output of the filter.

1 10. (Original) The portable transceiver of claim 9, wherein the
2 impedance inverter further comprises an inductor coupled to the output of the amplifier.

1 11. (Original) The portable transceiver of claim 10, wherein the
2 impedance inverter further comprises:
3 a pair of transconductance amplifiers; and
4 at least one capacitance coupled to the output of one of the transconductance
5 amplifiers.

1 12. (Original) The portable transceiver of claim 11, wherein the
2 impedance inverter removes direct current (DC) offset present at the input of the
3 amplifier.

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1 13. (Currently amended) A portable transceiver, comprising:
2 means for modulating a data signal;
3 means for upconverting the modulated data signal and provide a radio frequency
4 (RF) signal;
5 means for transmitting the RF signal;
6 means for converting a received signal to a baseband signal;
7 means for amplifying the baseband signal; and
8 means for inverting the impedance of the received signal at the output of the
9 amplifying means to transform inductance applied to a received signal to a capacitance,
10 ~~wherein the means for inverting impedance of the received signal does not affect the~~
11 ~~means for amplifying the baseband signal~~ the means for inverting the impedance having
12 a feedback loop that bypasses the amplifying means.

1 14. (Original) The portable transceiver of claim 13, further comprising
2 voltage controlled current source means for inverting the impedance of the received
3 signal at the output of the amplifier to transform the inductance applied to the received
4 signal to a capacitance.

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1 15. (Currently amended) A system for removing direct current (DC)
2 offset from a received signal, comprising:

3 a variable gain amplifier configured to amplify a received radio frequency (RF)
4 signal to generate an amplified RF signal; and

5 a gyrator-generated inductance applied at the output of the variable gain
6 amplifier, the gyrator-generated inductance configured to transform inductance present
7 at the output of the variable gain amplifier to a capacitance, ~~without interfering with the~~
8 ~~function of the variable gain amplifier~~ the gyrator-generated inductance and the variable
9 gain amplifier arranged such that the amplified RF signal is not applied at an input of
10 the variable gain amplifier.

1 16. (Currently amended) The system of claim 15, wherein the gyrator-
2 generated inductance adds a high pass filter pole ~~to~~ that is not a function of the
3 transconductance of the variable gain amplifier.

1 17. (Original) The system of claim 15, wherein the gyrator-generated
2 inductance shunts excess DC current present at the output of the variable gain amplifier
3 to ground.

1 18. (Original) The system of claim 15, wherein, at a frequency above a
2 high-pass cutoff frequency, the gyrator-generated inductance appears as a high
3 impedance at the output of the variable gain amplifier.